APPENDIX C

Expenses in Hatfield 4.0 Model

Expense Group: Network Expenses
Explanation: Maintenance and repair of various categories of investment - outside plant (e.g., NID, drop, distribution, Service Area Interface, Circuit equipment, Feeder plant) and Central office equipment (e.g., switch)
Data Origin: New England Telephone Company Incremental Cost Study (switching and circuit operating expenses), Hatfield Consultant (NID), FCC ARMIS 43-03 (everything else).

6212 Digital Electronic Expense
6230 Operator Systems Expense
6232 Circuit Equipment Expense
6351 Public
6362 Other Terminal Equipment
6411 Poles
6421 Aerial Cable
6422 Underground Cable
6423 Buried Cable
6426 Intrabuilding Cable
6431 Aerial Wire
6441 Conduit Systems

Amount Determination: Expense-to-Investment ratio (NET Study, ARMIS); Dollar per Line for NID.
Application: Determine cost by multiplying Expense-to-Investment ratio times modeled investments; Determine NID cost by multiplying Dollar-per-Line times number of lines

Expense Group: Network Operations
Explanation: Network related expenses needed to manage the network but not accounted for on a plant type specific basis
Data Origin: ARMIS 43-03

6512 Provisioning Expenses
6531 Power Expenses
6532 Network Administration
6533 Testing
6534 Plant Operations Administration
6535 Engineering

Amount Determination: Hatfield default Network Operations Factor 50% times the embedded amount in ARMIS.
Application: Determine cost by allocating to unbundled network elements (UNEs) equiproportionally relative to UNE direct costs. Cost of "Network Administration" is allocated to traffic sensitive (i.e., switching, signaling and interoffice) UNEs only.

Expense Group: Network Support and Miscellaneous
Explanation: Miscellaneous expenses needed to support day to day operations
Data Origin: ARMIS 43-03

6112 Motor Vehicles	Hatfield: Network Support
6113 Aircraft	Hatfield: Network Support
6114 Special Purpose Vehicles	Hatfield: Miscellaneous
6116 Other Work Equipment	Hatfield: Miscellaneous

Amount Determination: In essence, embedded ARMIS levels are scaled to reflect the relative change in either cable and wire (C&W) investment for Network Support Expenses or total investment for Miscellaneous Expenses in the modeled results versus ARMIS. For example:
Hatfield Cost
= Embedded ARMIS Expense x (Hatfield C&W Inv./ARMIS C&W Inv.)
The rationale is that these costs will be lower in a forward-looking cost study.
Application: Determine cost by allocating to unbundled network elements (UNEs) equiproportionally relative to direct costs

Expense Group: Other Taxes
Explanation: Taxes paid on gross receipts and property (i.e., 7240 Other Operating Taxes)
Data Origin: Hatfield expert estimate of 5% is based on overall Tier 1 Company ratio of ARMIS 7240 Expenses to ARMIS Revenues.
Amount Determination: Modeled costs are grossed up by 5%.
Application: Determine cost by allocating to unbundled network elements (UNEs) equiproportionally relative to direct costs.

Expense Group: Miscellaneous
Explanation: Miscellaneous expenses needed to support day to day operations
Data Origin: ARMIS 43-03
6122 Furniture
6123 Office Equipment
6124 General Purpose Computer
6121 Buildings
Amount Determination: In essence, embedded ARMIS levels are scaled to reflect the relative change in total investment in the Hatfield model versus ARMIS. For example:
Hatfield Cost
= Embedded ARMIS Expense x (Hatfield Tot. Inv./ARMIS Tot. Inv.)
The rationale is that these costs will be lower in a forward-looking cost study.
Application: Determine cost by allocating to unbundled network elements (UNEs) equiproportionally relative to direct costs.

Expense Group: Carrier-to-carrier customer service
Explanation: This category includes all carrier customer-related expenses such as billing, billing inquiry, service order processing, payment and collections. End-user retail services are not included in UNE cost development.
Data Origin: ARMIS 4304 (carrier-to-carrier cost to serve IXC access service)
7150 Service Order Processing
7170 Payment and Collections
7190 Billing Inquiry
7270 Carrier Access Billing System
Amount Determination: Hatfield multiplies embedded amount (across Tier 1 LECs) times 70% to get $1.69 per line per year. The cost is determined by multiplying the cost per line times the number of lines. This figure includes the above business office activities, hence there is no need for a separate non-recurring charge to account for this activities. The underlying data that the UNE costs were developed from include other types of non-recurring costs outside the business office. Most of the non-recurring costs are captured in the Hatfield UNE estimate.
Application: Determine cost by allocating to unbundled network elements (UNEs) equiproportionally relative to direct costs.

Expense Group: Variable Overhead
Explanation: Executive, Planning and General and Administrative costs
Data Origin: ARMIS 43-03

6711 Executive
6712 Planning
6721 Accounting & Finance
6722 External Relations
6723 Human Resources
6724 Information Management
6725 Legal
6726 Procurement
6727 Research & Development
6728 Other General & Administrative

Amount Determination: Hatfield estimates 10.4% multiplier based on AT&T public data.

		$Mill	Source
A	Rev. Net of Settlements	36,877	Form M 1994
B	Settlement Payout	4,238	Intl Traffic Data 1/19/96
C	Gross Revenues	41,115	A + B
D	Corporate Operations	3,879	Form M 1994
E	Revenue less Corp. Op.	37,236	C - D
F	Ratio	10.4%	D/E

Application: Cost is determined by multiplying the sum of all costs by 1.104.

Expense Group: Carrier-to-carrier Uncollectibles
Explanation: Revenues not realized associated with services provided (i.e., delinquency, fraud)
Data Origin: Company-specific ratio calculated from ARMIS 4304 Uncollectibles to ARMIS Access Revenues.
Amount Determination: Modeled costs are grossed up by the uncollectible rate.
Application: Determine cost by allocating to unbundled network elements (UNEs) equiproportionally relative to direct costs.

APPENDIX D

Network Operations Reduction

No matter what area of network operations one looks at, one observes a rich set of target opportunities for cost savings. In Account 6512, Network Provisioning, new technologies such as the Telecommunications Management Network (TMN) standards, procedures, and systems, and Digital Cross-Connect Systems (DCS) provide for much more centralized access and control, and self-provisioning by customers (including, and especially, knowledgeable CLECs). Given the tiered nature of TMN, where there are element, network, service, and business layers of management, some of the advantages of TMN will redound to the benefit of plant-specific expenses, while others, associated with the network, service and business management layers, will benefit the more-general activities included in network operations. DCS, with its higher investment cost but favorable impact on expenses, is assumed in HM 3, whereas it was not assumed in HM 2.2.2.

The use of Electronic Data Interchange, intranet technology, and technologies such as bar coding provide substantial opportunities to reduce the costs of the inventory component of this category of accounts. On the human resources side, there is a greater emphasis on quality control in provisioning activities, reducing incipient failures in the services and elements provided.

As far as power expenses, Account 6531, digital components typically consume less power than their analog counterparts. Furthermore, centralization in other expense categories also spills over into this category, since centralization implies fewer buildings to power less of the time. Finally, due to the onset of competition in the electric power industry and the greater regulatory scrutiny of new generation resources, the industry is increasingly willing to provide price reductions to large business (and, increasingly, even residential and small business) customers. It is now quite common for firms to participate in energy programs in which, in exchange for reducing consumption during peak hours, they receive substantial discounts in the cost of power.

Network Administration, Account 6532, benefits from the deployment of SONET-based transport, because many administration activities are oriented to reacting to outages, which are lessened with the deployment of newer technologies. Testing, Account 6533, also benefits from the better monitoring and reporting capabilities provided by TMN and SONET. This can lead to more proactive, better-scheduled preventative maintenance. On the human resources side, there is a growing tendency for testing activities to be taken over by contractors, leading to lower labor costs for the ILECs. To the extent the activities are still performed by telephone company personnel, they can be performed by personnel with lower job classifications. Finally, the use of "hot spares" can reduce the need for out-of-hours dispatch and emergency restoral activities. Overall, fiber and SONET projects are often "proven in" partly on the assumption that they will produce significant operational savings.

Plant Operations and Administration, Account 6534, is likely to require fewer supervisory personnel, and more involvement by the vendors of equipment to the ILECs. For instance, as vendors take over many of the installation and ongoing maintenance activities associated with their equipment, there will be fewer ILEC engineers requiring management. The use of multi-skilled craft people will allow for fewer specialists to be sent out to address particular problems, and less supervision to manage the people that are sent out. It will, for instance, allow for greater span of control in supervisory and management ranks.

Finally, Engineering, Account 6535, will be more focused on activities associated with positioning the ILECs in a multi-entrant marketplace, less on the engineering of specific elements and services, as those activities become more automated and more in the hands of the purchasers of unbundled elements. To the extent that engineering addresses particular projects, or categories of projects, the use of better planning

tools, such as the ability to geocode customer locations and sizes, will act to reduce the amount of such activities.

Additional specific reasons for adjusting the embedded level of these expenses include the following:

Recognize industry trends and the opportunities for further reductions. Network operations expenses, expressed on a per line basis, have already declined over the past several years. For the reasons described in the previous section, this trend is expected to continue as modern systems and technologies are deployed.

Eliminate incumbent LEC retail costs from the network operations expense included in the cost for unbundled network elements. A number of the sub-accounts (6533 Testing and 6534 Plant Operations Administration) include costs that are specific to retail operations that are not appropriately included in the cost calculated for unbundled network elements. A portion of the expenses booked to these sub-accounts represent activities that new entrants, rather than the incumbent LEC, will be performing. Analysis indicates that, as a conservative measure, 20% of the expenses in these two sub-accounts represent such retail activities and should be excluded. Since these two sub-accounts represent 56% of the total booked network operations expense, it is reasonable to conclude that, at a minimum, an additional 11% reduction should be applied to the historic booked levels of network operations expense.

Incorporate incumbent LEC expectations of forward-looking network operations expense levels. The Benchmark Cost Proxy Model ("BCPM"), sponsored by PacTel, Sprint, and US West, consistently calculates a level network operations expense per line that is well below historic levels and below the level calculated by the Hatfield Model. This projection of forward-looking network operations expenses, prepared for and advocated by three incumbent LECs, indicates that the Hatfield Model adjustment to the embedded levels of these expenses are appropriate and necessary (and may yield cost estimates that are conservatively high).

Minimize double counting of network operations expenses. A careful review of the way ARMIS account 6530 and the related sub-accounts (6531 Power, 6532 Network Administration, 6533 Testing, 6534 Plant Operations Administration, and 6535 Engineering) are constructed makes it clear that further adjustment is necessary to accurately produce forward-looking costs. Many of the engineering and administrative functions that are included in these accounts are recovered by the incumbent LECs through non-recurring charges. Without such an adjustment, these costs may be double-recovered through existing non-recurring charges and simultaneously through the recurring rates based on the Hatfield Model results. Similarly, double recovery is possible because these accounts are constructed as so-called "clearance accounts" where expenses are booked before they are assigned to a specific project. Without an adjustment, these expenses could be recovered as service or element-specific costs and as the shared costs represented by network operations expense.

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CERTIFICATE OF SERVICE

I, Scott M. Bohannon, do hereby certify that on this 17th day of October, 1997, I caused a copy of the foregoing Comments of AT&T Corp. and MCI Telecommunications Corporation on Customer Location Issues to be served upon each of the parties listed on the attached Service List by U.S. First Class mail, postage prepaid.

/s/ Scott M. Bohannon
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